REMARKS

In accordance with the foregoing, the specification, FIG. 3, and claims 1-9 have been amended, and new claims 10-16 have been added. Claims 1-16 are pending, with claims 1, 4, 6, and 9 being independent. No new matter is presented in this Amendment.

Request for Indication of Whether Substitute Specification Has Been Entered and Replacement Drawings Have Been Accepted

A substitute specification and three replacement sheets of drawings containing FIGS. 1-3 were filed on January 17, 2006, but the Office Action of April 1, 2008, does not indicate whether the substitute specification has been entered and replacement drawings have been accepted. Accordingly, it is respectfully requested that the Examiner indicate this in the next Office Action.

Request for Citation of Reference Relied on by Examiner

In the Office Action of April 1, 2008, the Examiner has relied on U.S. Reissued Patent No. RE32,574 to Ceshkovsky et al. in the rejection of claims 7 and 8 under 35 USC 103(a). However, the Examiner did not cite this reference in the Notice of References Cited (form PTO-892) attached to the Office Action of April 1, 2008. Rather, the Examiner cited U.S. Reissued Patent No. RE32,709 to Ceshkovsky et al. Accordingly, it is respectfully requested that the Examiner cite U.S. Reissued Patent No. RE32,574 to Ceshkovsky et al. in a Notice of References Cited in the next Office Action.

Specification Amendments

The specification has been amended to correct errors and improve its form.

Drawing Amendments

FIG. 3 has been amended as follows to correct errors and improve its form.

In block 302, "RF PROCESSING UNIT" has been changed to "SERVO."

In block 307, "CONDUCT" has been changed to "OUTPUT."

In block 308, "CALCULATE TRACK TO BE JUMPED AND DETERMINE OUTPUT TIME OF BREAK VOLTAGE" has been changed to "CALCULATE TARGET TRACK TO BE JUMPED TO AND DETERMINE OUTPUT TIME OF BRAKE VOLTAGE."

In block 309, "WHEN PICKUP ARRIVES TARGET TRACK, CONDUCT BREAK VOLTAGE" has been changed to "WHEN PICKUP ARRIVES AT TARGET TRACK, OUTPUT BRAKE VOLTAGE."

Claim Rejections Under 35 USC 102

Claims 1-6 and 9 have been rejected under 35 USC 102(b) as being anticipated by Nakatsu et al. (Nakatsu) (U.S. Patent No. 4,955,009). This rejection is respectfully traversed.

Claim 1

It is submitted that Nakatsu does not disclose "a servo to judge a position of the pickup based on the error signal, generate a track jump start control signal based on the judged position of the pickup, and generate a track jump end control signal" as now recited in independent claim 1.

When the track access command S14 shown in FIGS. 4 and 5 of Nakatsu is input to the track counter 27 as shown in FIGS. 2 and 3 of Nakatsu and to the reference speed generator circuit 18 as shown in FIG. 2 of Nakatsu to perform a track jump operation, the track counter 27, the reference speed generator circuit 18, the reference velocity generating circuit 19, and the velocity control section 60 shown in FIG. 2 of Nakatsu immediately generate an initial driving signal that is input to the linear actuator 5 of the optical head 3 shown in FIG. 2 of Nakatsu to start the track jump operation. Assuming *arguendo* that this initial driving signal that is input to Nakatsu's linear actuator 5 to start the track jump operation may arguably be considered to be "a track jump start control signal" as recited in claim 1, it is submitted that this initial driving signal is not generated based on a judged position of the optical head 3 as would be necessary for Nakatsu to arguably disclose "a servo to . . . generate a track jump start control signal based on the judged position of the pickup" as recited in claim 1. Rather, this initial driving signal is

generated based solely on the number N of tracks that the optical head 3 must move to get from the current track to the target track that is input to the track counter 27 as shown in FIGS. 2 and 3 of Nakatsu, and the direction D in which the optical head 3 must move to get from the current track to the target track that is input to track counter 27 and the reference velocity generating circuit 19 shown in FIGS. 2 and 3 of Nakatsu. This initial driving signal corresponds to the initial count value N of the count OA of the track counter 27 shown in FIGS. 4 and 5 of Nakatsu that is output from the track counter 27 immediately after the track access command S14 is input to the track counter 27 and the reference speed generator circuit 18.

Assuming *arguendo* that the difference signal that is output from the difference amplifier 11 shown in FIG. 2 of Nakatsu may arguably be considered to be "an error signal to control the pickup" as recited in claim 1 that is generated by "an RF processing unit . . . by shaping and amplifying the signal read by the pickup" as recited in claim 1, it is submitted that the initial driving signal corresponding to the initial count value N of the count OA of the track counter 27 shown in FIGS. 4 and 5 of Nakatsu that is input to the linear actuator 5 to start the track jump operation is not generated based on a position of the optical head 3 judged based on the difference signal as would be necessary for Nakatsu to arguably disclose "generat[ing] a track jump start control signal based on the judged position of the pickup" as recited in claim 1. Rather, the difference signal that is output from the difference amplifier 11 causes the pulse generator circuit 16 shown in FIG. 2 of Nakatsu to generate the pulse signal S11 shown in FIGS. 2-5 of Nakatsu that counts down the track counter 27 from the initial count value N as shown in FIGS. 4 and 5 of Nakatsu. Thus, the difference signal that is output from the difference amplifier 11 has no effect on the initial driving signal that is generated based on the initial count value N and starts the track jump operation. This is apparent from column 5, lines 11-22, of Nakatsu, which reads as follows:

> During the initial period of the output S16 from the OR gate 33, the down-counter 34 produces as its output the preset value N. This value N is sent as the remaining track count OA from the track counting section 30 to the reference velocity generating section 40, which is also in receipt of the access command S14, and generates and stores a reference speed pattern predefined for the stroke count N and begins output of a reference velocity signal to the velocity control section 60. The velocity control section 60 drives the linear actuator 5 so as to move the light beam 2 toward the target track at the reference velocity.

Accordingly, for at least the foregoing reasons, it is submitted that Nakatsu does not disclose "a servo to . . . generate a track jump start control signal based on the judged position of the pickup" as recited in claim 1.

Claims 2 and 3

It is submitted that Nakatsu does not disclose the feature "wherein if the judged position of the pickup is within a reference range, the servo outputs a predetermined voltage as the track jump start control signal to the driver" recited in dependent claim 2, or the feature "wherein if the judged position of the pickup is not within the reference range, the servo cuts off the predetermined voltage from being output as the track jump start control signal to the driver until the judged position of the pickup is within the reference range" recited in dependent claim 3, because Nakatsu's initial driving signal corresponding to the initial value N of the count OA of the track counter 27 is immediately output to the linear actuator 5 when the track access command S14 is input to start the track jump operation as discussed above regardless of the position of the optical head 3 and without judging the position of the optical head 3 or making any determination whatsoever as to whether the position of the optical head 3 is within a reference range. Furthermore, it is not seen where Nakatsu disclose any elements that can cut off the driving signal that is output to the linear actuator 5.

In explaining the rejection of claim 2, the Examiner states as follows:

> Nakatsu teaches the apparatus of claim 1, wherein: where the position of the pickup judged by the error signal output from the RF processing unit is within a reference range, the servo outputs a predetermined voltage for the track jump start/end control to the driver **(column 5:35-40,55-58 discloses that once pickup is at midpoint of track, the pulse which as [*sic*] been generated for causing a delay in track accessing is no longer generated and the "jump" commences)**.

Column 5, lines 35-40, of Nakatsu reads as follows:

> The access operation starts with the spot positioned near the center of the current track, in which position the input S0 to the pulse generator circuit 16 in the track counting section 30 is approximately zero. As the spot begins moving near the center of the current track, the signal SO fluctuates around zero.

Column 5, lines 55-58, of Nakatsu reads as follows:

> Accordingly, by the time the input S0 to the pulse generator circuit 16 returns to zero at the midpoint between the two tracks, the output of the pulse generator circuit 16 is no longer masked.

However, neither these passages nor any other portion of Nakatsu discloses that the masking pulse S15 shown in FIGS. 3-5 of Nakatsu causes a delay in track accessing as alleged by the Examiner, or that the track jump operation commences only after the masking pulse stops being generated as alleged by the Examiner. What the masking pulse S15 actually does is to prevent jitter in the pulse signal S11 output from the pulse generator 16 as shown in FIGS. 4 and 5 from causing the track counting section 30 shown in FIG. 2 including the track counter 27 shown in FIGS. 2 and 3 to miscount tracks after the track jump operation has already commenced as described in column 35, lines 35-44, of Nakatsu, which reads as follows:

> The access operation starts with the spot positioned near the center of the current track, in which position the input S0 to the pulse generator circuit 16 in the track counting section 30 is approximately zero. As the spot begins moving near the center of the current track, the signal SO fluctuates around zero. Such fluctuations may give rise to jitter in the output S1 [*sic*; should be S11] from the pluse [*sic*; should be pulse] generator circuit 16, as shown in FIG. 4 and FIG. 5, but the jitter is masked by the masking pulse S5 and does not cause the track counting section 30 to miscount tracks.

During the time that the masking pulse S15 is being generated as shown in FIGS. 4 and 5 of Nakatsu, the optical head 3 is already moving to perform the track jump operation in response to the initial driving signal corresponding to the initial value N of the count OA of the track counter 27 shown in FIGS. 4 and 5 as described in column 5, lines 11-22, of Nakatsu discussed above in connection with claim 1. As can be seen from FIG. 3 of Nakatsu, the masking pulse S15 masks the T input of the down counter 34, but does not mask the Q output that outputs the count OA of the track counter 27. Thus, the masking pulse S15 can only prevent the track counter 27 from counting down from N to N-1 as long as it is being generated as shown in FIGS. 4 and 5. It cannot prevent the track counter 27 from outputting the value N of the count value OA that causes the initial driving signal that starts the track jump operation to be generated.

Claims 4 and 5

It is submitted that Nakatsu does not disclose "generating a track jump start control signal based on the judged position of the pickup" as now recited in independent 4 for at least the same reasons discussed above that Nakatsu does not disclose the similar feature of claim 1.

Also, it is submitted that Nakatsu does not disclose the following features now recited in dependent claim 5 for at least the same reasons discussed above that Nakatsu does not disclose the similar features of claims 2 and 3:

> if the judged position of the pickup is within a reference range, the outputting of the track jump start control signal comprises outputting a predetermined voltage as the track jump start control signal to the driver; and
>
> if the judged position of the pickup is not within the reference range, the outputting of the track jump start control signal comprises cutting off the predetermined voltage from being output as the track jump start control signal to the driver until the judged position of the pickup is within the reference range.

Claim 6

It is submitted that Nakatsu does not disclose the following features now recited in independent claim 6 for at least the same reasons discussed above that Nakatsu does not disclose the similar features of claims 2 and 3:

> a controller to monitor the tracking control signal, and control the track jumping based on the tracking control signal, wherein:
>
> if the controller determines that the tracking control signal indicates that the position of the optical pickup is within a predetermined range of a center of the track, the controller immediately outputs a track jump start control signal to the driver to perform the track jump; and
>
> if the controller determines that the tracking control signal indicates that the position of the optical pickup is not within the predetermined range, the controller delays outputting the track jump start control signal to the driver until the tracking control signal indicates that the position of the optical pickup is within the predetermined range.

Claim 6 also now recites the following features:

> an RF processing unit to generate a positional error signal based on an output signal of the optical pickup;
>
> a servo to judge a position of the optical pickup relative to a track of the optical disc based on the positional error signal, and output a tracking control signal for controlling a position of the optical pickup based on the judged position; [and]
>
> a driver to control the position of the optical pickup using the tracking control signal output from the servo[.]

Assuming *arguendo* that the difference amplifier 11 in FIG. 2 of Nakatsu may arguably be considered to be "an RF processing unit" as recited in claim 6; that the tracking command circuit 25 and the tracking servo circuit 26 in FIG. 2 of Nakatsu may arguably be considered to be "a servo" as recited in claim 6; that the output signal of the tracking servo circuit 26 in FIG. 2 of Nakatsu may arguably be considered to be "a tracking control signal" as recited in claim 6; and that the tracking actuator 6 in FIG. 2 of Nakatsu may arguably be considered to be "a driver" as recited in claim 6, it is submitted that Nakatsu does not disclose "a controller to monitor the tracking control signal, and control the track jumping based on the tracking control signal" as recited in claim 6 because the output signal of the tracking servo circuit 26, which may arguably be considered to be "a tracking control signal" recited in claim 6, is input only to the tracking actuator 6, and is not input to any of the track counting section 30, the reference velocity generating section 40, the velocity detection section 50, the velocity control section 60, and the linear actuator 5 shown in FIGS. 1 and 2 of Nakatsu that perform the track jumping operation. Thus, Nakatsu does not disclose "a controller to monitor the tracking control signal, and control the track jumping based on the tracking control signal" as recited in claim 6.

Claim 9

Claim 9 has been amended solely to improve its form. Claim 9 has not been amended to distinguish over Nakatsu. No new limitations have been added to claim 9. Accordingly, if the next Office Action includes a new ground of rejection of claim 9, the Examiner will not be able to make that Office Action final.

It is submitted that Nakatsu does not disclose the following features recited in independent claim 9 for at least the same reasons discussed above that Nakatsu does not disclose the similar features of claims 2 and 3.

> judging whether a position of the optical pickup is within a predetermined range relative to a center of the track at a time of a track jump command;
>
> immediately outputting the track jump command to the optical pickup if the optical pickup is within the predetermined range; and
>
> delaying the outputting of the track jump command to the optical pickup if the optical pickup is not within the predetermined range.

In particular, the Examiner states as follows with respect to the "delaying" feature of claim 9:

> and delaying the outputting of the track jump command if the pickup is not within the predetermined range **(column 5:45-41 clearly discloses delay of jump while beam spot is moving to within a range of the track's center)**.

Column 5, lines 45-51, of Nakatsu, which ends in a sentence fragment, read as follows:

> The fixed duration of the masking pulse S15 should be longer than the time taken for the spot to move from any point (at which the spot may be situated in the track following mode operation) out of the region (in which the signal S11 is near zero) near the center of the track even if the slowest reference speed pattern is employed. The fixed duration of the masking pulse S15 should also

However, neither this passage nor any other portion of Nakatsu discloses "delay of jump while beam spot is moving to within a range of the track's center" as alleged by the Examiner because the movement of the spot referred to in this passage is movement that is occurring during the track jump operation in response to the initial driving signal corresponding to the initial value N of the count OA of the track counter 27 shown in FIGS. 4 and 5 that is immediately output to the linear actuator 5 when the track access command S14 shown in FIGS. 1-5 of Nakatsu is input to start the track jump operation as discussed in detail above in connection with claims 1-3.

As discussed above in connection with claim 2, what the masking pulse S15 referred to in column 5, lines 45-51, of Nakatsu relied on by the Examiner actually does is to prevent jitter in the pulse signal S11 output from the pulse generator 16 as shown in FIGS. 4 and 5 from causing the track counting section 30 shown in FIG. 2 including the track counter 27 shown in FIGS. 2 and 3 to miscount tracks after the track jump operation has already commenced as described in column 35, lines 35-44, of Nakatsu, which reads as follows:

> The access operation starts with the spot positioned near the center of the current track, in which position the input S0 to the pulse generator circuit 16 in the track counting section 30 is approximately zero. As the spot begins moving near the center of the current track, the signal SO fluctuates around zero. Such fluctuations may give rise to jitter in the output S1 [*sic*; should be S11] from the pluse [*sic*; should be pulse] generator circuit 16, as shown in FIG. 4 and FIG. 5, but the jitter is masked by the masking pulse S5 and does not cause the track counting section 30 to miscount tracks.

During the time that the masking pulse S15 is being generated as shown in FIGS. 4 and 5 of Nakatsu, the optical head 3 is already moving to perform the track jump operation in response to the initial driving signal corresponding to the initial value N of the count OA of the track counter 27 shown in FIGS. 4 and 5 as described in column 5, lines 11-22, of Nakatsu discussed above in connection with claim 1. As can be seen from FIG. 3 of Nakatsu, the masking pulse S15 masks the T input of the down counter 34, but does not mask the Q output that outputs the count OA of the track counter 27. Thus, the masking pulse S15 can only prevent the track counter 27 from counting down from N to N-1 as long as it is being generated as shown in FIGS. 4 and 5. It cannot prevent the track counter 27 from outputting the value N of the count value OA that causes the initial driving signal that starts the track jump operation to be generated.

Conclusion—Claim Rejections Under 35 USC 102

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 1-6 and 9 under 35 USC 102(b) as being anticipated by Nakatsu be withdrawn.

Claim Rejections Under 35 USC 103

Claims 7 and 8 have been rejected under 35 USC 103(a) as being unpatentable over Nakatsu in view of Ceshkovsky et al. (Ceshkovsky) (U.S. Reissued Patent No. RE32,574). This rejection is respectfully traversed.

It is submitted that Nakatsu and Ceshkovsky do not disclose or suggest the following feature now recited in dependent claim 7:

> wherein after the controller has output the track jump start signal to the driver, the controller calculates a target track to be jumped to and sets an output time of a track jump end signal,

or the following feature now recited in dependent claim 8:

> wherein the controller outputs the track jump end signal to the driver when the optical pickup arrives at the target track,

at least in combination with the features now recited in independent claim 6 from which claims 7 and 8 depend.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 7 and 8 under 35 USC 103(a) as being unpatentable over Nakatsu in view of Ceshkovsky be withdrawn.

Patentability of New Claims 10-16

It is submitted that Nakatsu and Ceshkovsky do not disclose or suggest the following features recited in new dependent claims 10-12:

> wherein the track jump start control signal is a kick voltage, and the track jump end control signal is a brake voltage,

or the following features recited in new dependent claim 13:

> wherein the delaying of the outputting of the track jump command to the optical pickup if the optical pickup is not within the predetermined range comprises:
>
> delaying the outputting of the track jump command to the optical pickup until the optical pickup is within the predetermined range; and

outputting the track jump command to the optical pickup while the optical pickup is within the predetermined range,

or the following feature recited in new dependent claim 14:

wherein the track jump command is a kick voltage that is output to a driver of the optical pickup,

or the following features recited in new dependent claim 15:

wherein:

the track jump command causes the optical pickup to start moving toward a target track of the optical disc; and

the method further comprises outputting a track jump stop command to the optical pickup when the optical pickup arrives at the target track.

or the following feature recited in new dependent claim 15:

wherein the track jump stop command is a brake voltage that is output to a driver of the optical pickup.

at least in combination with the features now recited in independent claims 1, 4, and 6 from which new claims 10-12 depend, and in combination with the features of independent claim 9 from which new claims 13-16 depend.

For at least the foregoing reasons, it is submitted that new claims 10-16 are patentable over r Nakatsu and Ceshkovsky, and an indication to that effect is respectfully requested.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with the filing of this paper, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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